Name: Date:

Exam: Function Reflections (Practice version 8)

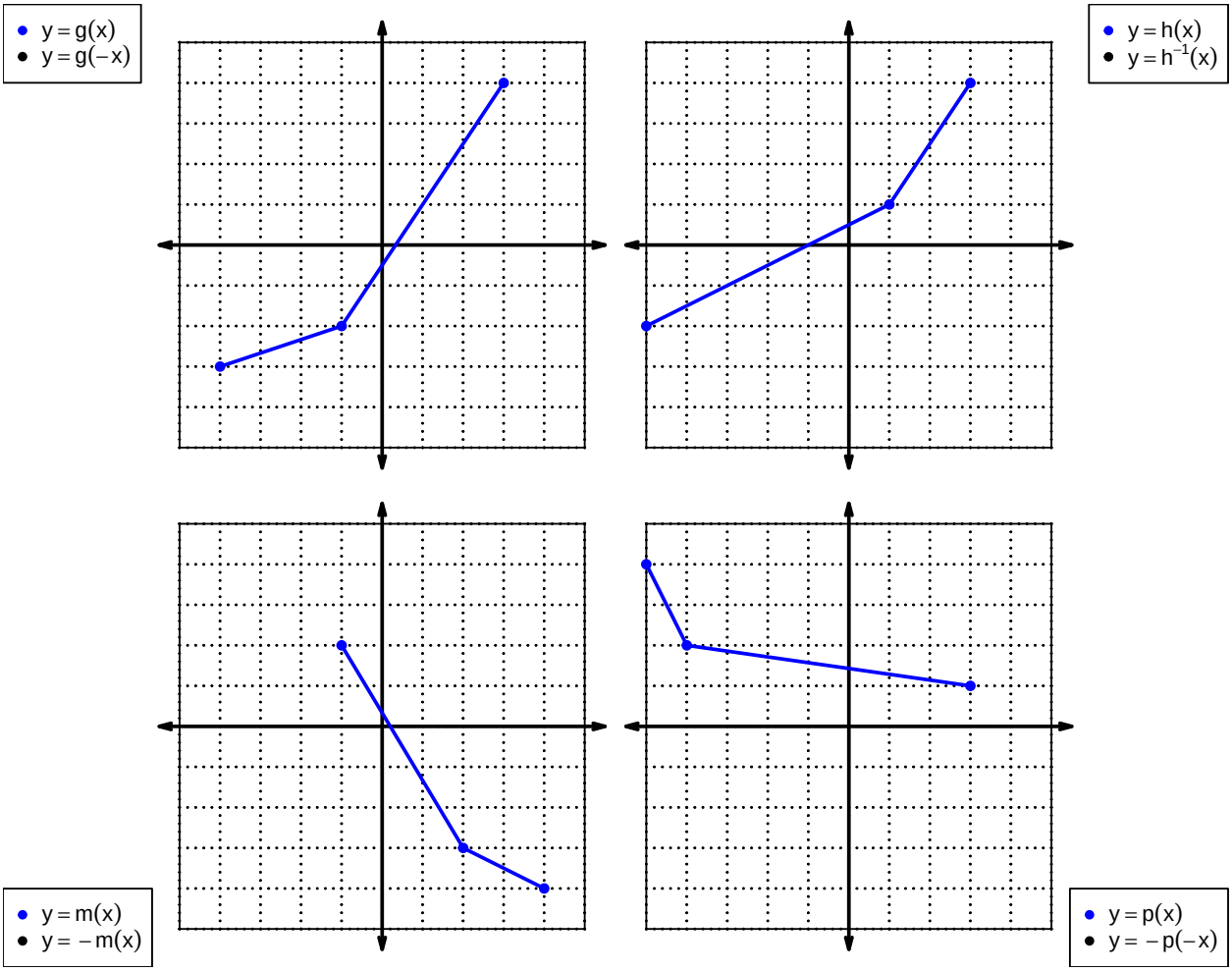
1. Let function f be defined by the polynomial below:

$$f(x) = -5x^5 + 8x^4 - 3x^3 - 9x^2 + 4x - 7$$

Draw lines that match each function reflection with its polynomial:

Reflections	Polynomials
$-f(-x)$	$-5x^5 - 8x^4 - 3x^3 + 9x^2 + 4x + 7$
$-f(x)$	$5x^5 - 8x^4 + 3x^3 + 9x^2 - 4x + 7$
$f(-x)$	$5x^5 + 8x^4 + 3x^3 - 9x^2 - 4x - 7$

2. In each xy plane shown below, a function is graphed with blue. Draw the indicated reflections (as a second curve, indicated in legend) with black (or with whatever you have). The x axis is horizontal and the y axis is vertical (as typical), and the scale is equal on both axes.



Exam: Function Reflections (Practice version 8)

For all questions on this page, the functions f, g, and h are defined by the table below.

x	$f(x)$	$g(x)$	$h(x)$
1	4	9	2
2	7	4	6
3	5	6	4
4	6	7	8
5	1	2	1
6	8	1	7
7	3	3	9
8	9	5	3
9	2	8	5

3. Evaluate $g(1)$.

4. Evaluate $f^{-1}(6)$.

5. By filling more rows of the table, it is possible to make function h **even**. If that were done, what would be the value of $h(-7)$?

6. By filling more rows of the table, it is possible to make function f **odd**. If that were done, what would be the value of $f(-5)$?

Exam: Function Reflections (Practice version 8)

7. A function, f, is **even** if $f(x) = f(-x)$ for all x in the domain. A function, g, is **odd** if $g(x) = -g(-x)$ for all x in the domain.
   Let polynomial p be defined with the following equation:

$$p(x) \;=\; -x^2 + x$$

   a. Express $p(-x)$ as a polynomial in standard form.

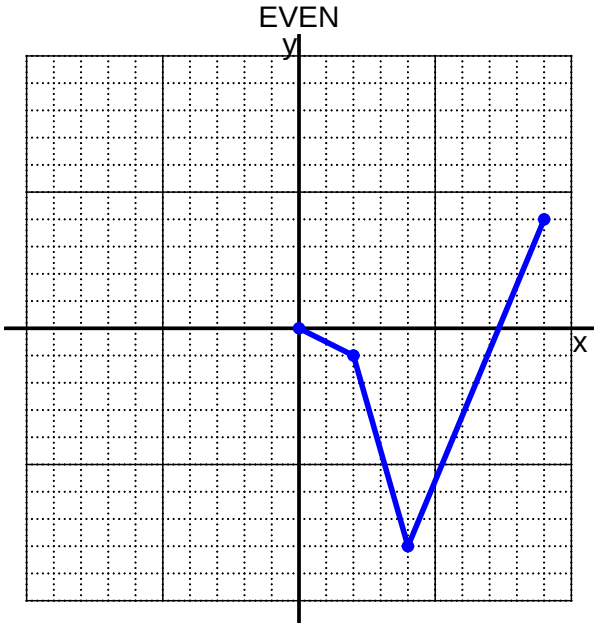
   b. Express $-p(-x)$ as a polynomial in standard form.

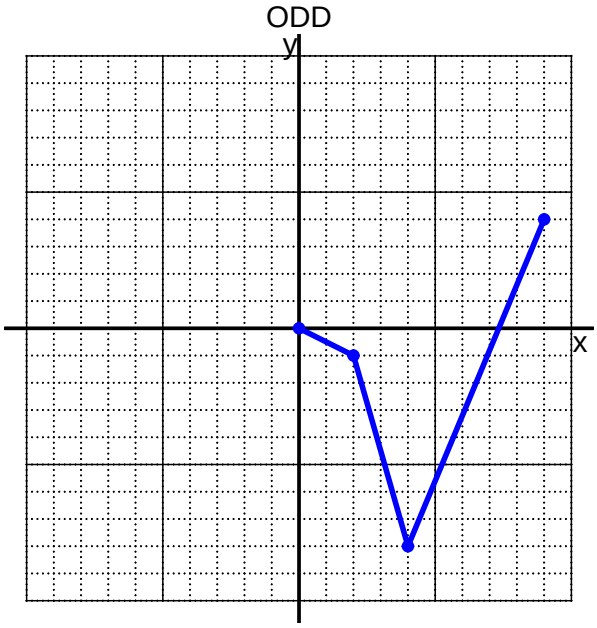
   c. Is polynomial p even, odd, or neither?

   d. Explain how you know the answer to part c.

Exam: Function Reflections (Practice version 8)

8. I have drawn half of a function. Draw the other half to make it even or odd.





9. Let function f be defined with the equation below.

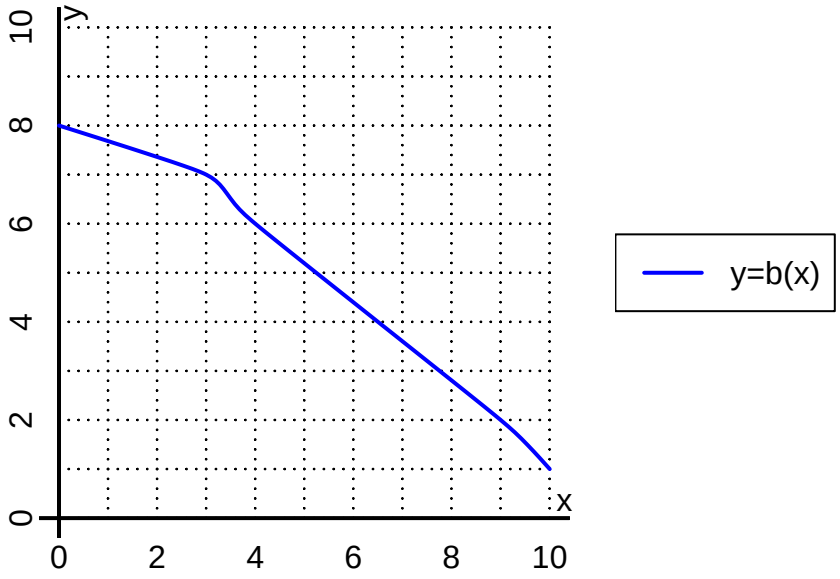
$$f(x) \;=\; 8x - 9$$

a. Evaluate $f(6)$.

b. Evaluate $f^{-1}(47)$.

Exam: Function Reflections (Practice version 8)

10. The function b is represented by the curve $y = b(x)$ graphed below.



a. Evaluate $b(4)$.

b. Evaluate $b^{-1}(2)$.

Exam: Function Reflections (Practice version 8)

11. Function f is defined by the table below.

    a. Complete the columns for $-f(x)$ and $f(-x)$ and $-f(-x)$.

x	$f(x)$	$-f(x)$	$f(-x)$	$-f(-x)$
-2	-7			
-1	9			
0	0			
1	-9			
2	7			

b. Is function f even, odd, or neither?

c. How do you know the answer to part b?